

**Meeting of the Decommissioning Project Community Workgroup (#22)**  
**Tuesday, January 18, 2005**  
**Perkins High School**

The meeting began at 7 p.m. Present were Workgroup members John Blakeman, Janet Bohne and Chris Gasteier, along with the following NASA representatives: Frank Greco, Program Manager, NASA Glenn; Sally Harrington, Public Affairs Specialist, NASA Glenn and Keith Peecook, Senior Project Engineer, NASA Plum Brook Station. Also present were Susan Santos, PhD, and Michael Morgan of FOCUS GROUP. Also in attendance were 13 members of the public.

Keith Peecook began the meeting by noting that Decommissioning Project Manager Tim Polich was not present due to family illness, then provided welcoming remarks and introductions. Susan Santos of FOCUS GROUP subsequently requested and received acceptance of the meeting minutes from October 2004 and then reviewed the agenda for this evening's meeting. She also spoke briefly about the "Welcome to 2005" packets that had been prepared for Workgroup members and included meeting dates for the rest of 2005 (April 12, July 19 and October 19).

Project Update

Keith gave a Project Update, reporting that NASA had submitted to the U.S. Nuclear Regulatory Commission (NRC) its Final Status Survey Plan (FSS) on December 27, 2004. He noted that the plan, which he said explains "how we're (NASA) going to clean up the site," included three Technical Basis Documents; a supplemental Characterization Report, Annual Environmental Reports and a Hydrogeological Report prepared by the U.S. Army Corps of Engineers (USACE). He added that a copy of the plan would be sent to the Decommissioning Project Community Information Bank at BGSU Firelands.

Keith described submittal of the FSS Plan as a "project milestone" and explained its importance to the Decommissioning Project, because it details the way in which NASA will verify that it has achieved the appropriate cleanup levels at the end of the project. He pointed out the NRC needs to approve the plan before NASA can begin FSS work and anticipated that there would be NRC approval of the plan and the start of work sometime this spring. Workgroup member John Blakeman asked if NASA were going to measure for radiation as part of the plan and Keith said NASA would clean up the site soils and subsurface soils until radiation levels there were no more than 25 millirem per year, to meet NASA's decommissioning cleanup standard.

Next, Keith described fixed equipment removal operations in several Reactor Facility buildings, pointing out that to date, NASA has safely removed, packaged and shipped nearly 6 million pounds of low-level radioactive waste (LLRW) – mostly in the form of fixed equipment – to the Envirocare licensed disposal facility in Utah. In addition, NASA has removed, packaged and shipped to Envirocare more than 308,000 pounds of mixed waste (a combination of hazardous waste and LLRW – mostly in the form of contaminated lead).

Keith then talked about the radiological sampling that had been done on PBRF soils with a geoprobe – a truck-mounted, two-pronged steel device that can dig down over 20 feet to bedrock levels. The purpose of this sampling was to determine the extent of soils cleanup that NASA would have to undertake. NASA took more than 500 samples, analyzed 383

and found only four samples that indicated a need for cleanup. John Blakeman asked if all the soil samples had been taken inside the Plum Brook Station (PBS) fence line and Keith said they had, adding that sampling has been conducted in several areas including along the Pentolite Ditch and the Emergency Retention Basin. Workgroup member Chris Gasteier asked how far away from the Reactor Facility the furthest samples had been taken, with Keith responding that this samples were taken three quarters of a mile away, at the Pentolite Ditch where it enters Plum Brook.

Keith went on to discuss the delivery of the cask that will provide a temporary home for the cadmium-containing control rods that were removed from the Hot Lab. Because the rods contain cadmium, which is classified as a hazardous material and has a radioactive component hotter than Class A waste, they cannot be sent to either Envirocare, or to the Barnwell licensed disposal facility in South Carolina. As was noted at previous Workgroup meetings, Keith said there were seven rods in all, each about four feet tall and several inches thick. The rods were first placed in a steel liner and then placed inside the cask. The cask, which has six inches of steel wrapped around six inches of lead – wrapped around another six inches of steel – is 10 feet tall and 10 feet in diameter, weighs 64,000 pounds and has a lid, which weighs an additional 10,000 pounds. It now stands on a concrete pad in an area within the PBS fence line in an area once used for shipping out material off site from PBS during the 1960's. The temporary storage has been made possible via a license amendment that NASA Glenn is working on with the NRC, until a permanent disposal facility (most likely one operated by the U.S. Department of Energy) can be identified.

John Blakeman asked about the half-life of the cadmium. Keith said it was 5.6 years and noted that NASA has shipped out materials with much higher levels of LLRW but reiterated that this particular material cannot be sent to Envirocare or Barnwell. John commented that the rods do not present “a radiological hazard per se” and Keith agreed, noting that the dose rate at the fence is less than one millirem and that there are three fences that separate the cask from the public.

Keith said NASA had also begun the radiological surveying of embedded piping, consisting of pipes more than three feet below grade and embedded in concrete, which NASA plans to keep in place when decommissioning is complete. He said some of the piping goes 18 to 20 feet below ground but that decommissioning workers had surveyed 300 feet of stainless steel piping – 24 inches in diameter – that ran from the reactor tank to the Primary Pump House, and found it to be very clean. He said workers had also gone through 1,000 feet of black iron piping (known as drain lines) in the quadrants and canals and while it was “very rusty” it was also radiologically clean. He added that the decontamination plan for the piping involves “washing” it with an acid-like substance, then filling the pipes with grout and leaving them in place.

#### Other Progress and Plans

Keith noted that NASA will soon achieve another milestone when the project's “count labs” which are used to analyze a variety of on-site samples, are moved out from the Reactor Facility fence line. The significance is that it reduces the area of PBRF under radiological restrictions. Keith added that by April, it is expected that the project workforce will have been reduced from the current 150 to half that number, since the decontamination work that will be a project priority during the next two years, requires far fewer workers than did segmentation or equipment removal. The latter work is now more than 85% complete, with the recent completion of removal efforts in several

buildings and structures, including the Service Equipment, Reactor Office and Lab and Waste Handling Buildings, the Fan House, and the Hot and Cold Pipe Tunnels, as well as Rooms 2,3,4,5,7 and 8 of the Primary Pump House and Quadrants A, B and C of the Containment Vessel.

Keith reported that segmentation is nearly complete, with only three pieces remaining in the bottom bowl area of what had once been the reactor tank. Also remaining is a flange – a 10-inch ring of steel near what had been the top of the tank – that is embedded in concrete and will have to be removed with a jackhammer at the very end of segmentation activities. Keith said that work is going slowly due to the need to remove asbestos from the reactor tank area while the final cuts were being made. Workers from subcontractor Toltest have donned protective clothing and respirators while removing the asbestos, then sealing up the area with foam.

During asbestos removal, NASA has continued to employ a high efficiency ventilation system and tent over the top of the tank to create a negative pressure environment, which ensured that no asbestos would escape. He added that another reason for segmentation delays was the fact that workers from subcontractor Wachs Technical Services had been using a high intensity plasma arc torch to cut a number of piping penetrations around the tank; but when the hot torch hit the pipes, they were found to contain lead, which vaporized on contact. The workers were tested for lead blood levels and none was found, but NASA had to revert to the use of hand grinding tools for the remainder of the work. Keith observed that these delays are “the kinds of things that all decommissioning projects run into.”

Beyond segmentation, Keith said that other work in what had been the reactor tank area has been taking place. This has included removal of equipment from what was called the “sub-pile room” below where the tank had been (the equipment is “remarkably clean”) and a lead disk, which has to be removed. Also slated for removal is the concrete and rebar “bioshield” that once provided workers with protection (in the event of a possible accident) when the reactor was operational. NASA will remove the rebar from the concrete to see if any of the metal is activated. If it is, NASA will dispose of it accordingly, depending on the level of activation.

Looking ahead, NASA will step up decontamination efforts, which currently involve Rooms 2 and 3 of the Primary Pump House, Hot Cell #7 in the Hot Lab and in the Reactor Office and Lab Building. Keith reported good news in the Containment Vessel and Hot Lab, as sampling of the concrete there shows that there is no need to remove large blocks of it from these buildings. Current decontamination techniques such as scabbling (using hand-held, vacuum-equipped grinding machines) will be sufficient to complete the work.

Keith said NASA’s “to do list” over the next few months will include final fixed equipment removal (FER) in the Containment Vessel and in the Hot and Cold Retention Areas, which contain large (but empty) tanks in a concrete vault. After FER, workers will begin decontamination in each area. NASA will also begin preparations for FSS work but will hold off until beginning actual work until the NRC has provided comment on the plan. He cautioned that although NASA could begin actually FSS work, the Decommissioning Team would be responsible for time and money lost if NASA undertook work that the NRC might later say had to be changed. But he said that if there

is a substantial delay in the NRC's review of the plan, NASA might think about going ahead with some FSS work after all due consideration is given.

In addition, Keith provided some good news on worker safety throughout the Decommissioning Project. He said that in well over 800,000 hours of work on the project, there had been just one worker "lost time" incident and only 6 OSHA recordable injuries – for an OSHA rate of 2.79, which Keith explained was less than one third of the OSHA acceptable rate for heavy construction work.

Walt Long, a member of the public who once worked at both PBRF and the Davis-Besse nuclear power plant, then asked some questions. He said he has twice had cancer and wondered if it could be related to radiation doses he had received during his service at the nuclear facilities. He was especially concerned about what he said was "a clean clothes barrel" at PBRF which once registered on a Geiger counter, adding that workers "did not know as much about radiation as they do today." He also noted that two of his children had birth defects and wondered "how much radiation we were getting" when he worked at PBRF and Davis-Besse. Keith said he was very sorry for Mr. Long's health problems and understood his concerns, but stated that both NASA and Davis-Besse would still have all worker radiation dose records – and that the allowable rates remain safe. He also pointed out that studies have shown the children of survivors of the nuclear attack on Nagasaki in World War II (who had received significant levels of radiation) did not experience birth defects. Workgroup member Janet Bohne, a health professional who holds a Doctorate in Medical Education, said that radiation exposure does not cause birth defects in the children of those exposed and asked Mr. Long what kinds of cancer he had experienced. He said prostate and colon. Janet explained to him that these cancers do not result from radiation exposure, and noted that only bone marrow cancer might result from radiation exposure.

Susan Santos of FOCUS GROUP then mentioned her experience working with the National Academy of Science (NAS) and mentioned NAS cancer studies on radiation workers. She pointed out that NASA has very strict controls at PBRF that include people being monitored even before they walk into the Reactor Facility. Keith added that the administrative controls used to limit decommissioning worker exposure are so strict that the administrative limit on worker exposure is just one fifth of the legal limit. Janet Bohne added, "A cancer cell is like an isotope. If you live long enough, every man and woman could get it. NASA retiree Jack Crooks, who recovered from prostate cancer agreed, adding, "It's the age range" that is the major factor, not previous worker radiation exposure. John Blakeman then pointed out that Workgroup members had taken a tour of the Reactor Facility early on during decommissioning, adding "we've gone through the checks, there is no exposure," at PBRF. Susan Santos suggested to Mr. Long that he pick up Decommissioning Project fact sheets, including one on monitoring for safety, before he left the Workgroup meeting, and to feel free to talk with NASA personnel regarding any other questions or concerns at the end of the meeting.

#### Project Costs and Future

Keith presented project costs and schedule slides. The current estimate for total project costs is \$141.3 million and he noted that this was an increase over the July 2004 estimate of \$131 million. He explained that delays in some of the original work that had been planned, including such areas as the Hot and Cold Retention Tanks and delays in completing segmentation, due to the need to have Toltest conduct asbestos remediation and make some of the final cuts on the tank while doing so. He said another factor was

the discovery of the heavy lead disks that have to be removed as part of fixed equipment removal operations. NASA Program Manager Frank Greco said it was important to keep in mind that NASA's latest estimate is lower than the \$152 million that had been projected in 1999. He also noted that the demolition of buildings and NASA's termination of its license with the NRC had been scheduled for late in 2007, adding, "We're a year ahead of that." He also said there are reserves built into both the project budget and schedule.

Keith took the opportunity to take a longer look at the future of decommissioning and beyond, noting that the "power houses" on the site, once used when PBS was an Ordnance Facility in World War II, will be demolished this summer. NASA plans to use concrete from these buildings as fill. He also said NASA PBS is planning to reuse the Advanced Test Services (ATS) Building, adjacent to the Reactor Facility site, as a pharmaceutical and technology incubator center, with the goal of creating more high-tech companies and jobs in Erie County. All the other buildings will be demolished after the license termination takes place, Keith added, "so we don't have to survey all the rubble and possibly have to send it to Envirocare."

Susan Santos noted that the discussion of the future lent itself to a question that both Workgroup and other community members have asked: What will happen to the PBRF site after decommissioning has been completed? Keith first provided a little history, noting that the Reactor Facility "has been sitting there for 30 years," unused and that, in 1997, NASA decided to decommission the facility at the urging of the NRC since the "Possess But Do Not Operate" license that NASA held at that time was expiring (and the NRC would not extend it). He also pointed to comments made back then by the NRC Inspector General that LLRW waste site disposal costs had been increasing at a rate of 30% a year, which promised to make decommissioning an even more expensive prospect in the future. Frank Greco added that some people had been hoping that someday, the facility could be reused but by the 1980's they realized "it was outmoded." He said the ATS Building was removed from the license in the 1980's. NASA prepared a Decommissioning Plan for the NRC, which was submitted in December 1999 and approved in March 2002, when actual decommissioning work began.

Keith then addressed the future use of the site after decommissioning, pointing out that the 27-acre Reactor Facility site sits on 500 acres of land, which will remain as a buffer for active PBS facilities that will continue to conduct testing. He reiterated what Rich Kunath, Chief of the PBS Management Office, had said about some of the potential dangers of high pressure testing conducted at the Hypersonic Tunnel facility and the new cryogenics research facility that has been relocated to PBS from NASA Glenn in Cleveland. Rich had noted that NASA has always had the need for a large buffer zone for safety reasons. The land under what is currently the Reactor Facility will continue to be used as this buffer zone.

#### Community Outreach Update

NASA Glenn Public Affairs Specialist Sally Harrington next provided an update on Community Outreach activities in support of decommissioning. She reported that NASA had just published the January edition of the quarterly Decommissioning Project newsletter (edition #14) and sent it to all 2,300 members of the project mailing list. She also said she had talked with a staff member at Channel 81, the Sandusky local cable access channel for Buckeye Cablevision, about the possibility of having a future Workgroup meeting aired via tape delay on the cable access channel. She also reported

that an article on decommissioning had been published in the *Sandusky Register* on Sunday, January 16, which included an interview with Decommissioning Project Manager Tim Polich and an announcement about the Community Workgroup meeting. Sally said she had worked in cooperation with the article's author, Tom Jackson, when he was a reporter for *Crane's Cleveland Business*, said he was a good reporter and believed there may now be more *Register* articles about PBS activities in future, since NASA is part of Jackson's beat.

In addition, Sally reported that NASA had distributed some 600 copies of the documentary video "Of Ashes and Atoms," to NASA retirees, current and former Workgroup members, Erie County schools, churches and community organizations and to libraries in Erie and Huron Counties and beyond. Along with the video, NASA also distributed 600 copies of "NASA's Nuclear Frontier" a pictorial history book on PBRF, with Sally noting that a more scientific history of the Reactor Facility will be published in 2006. She also said that NASA management is hoping to hold an Open House in 2006 (which would be the 50<sup>th</sup> anniversary of PBS) and that research at the active PBS test facilities would increase this spring. NASA will conduct another round of tests on "Solar Sails" made of Mylar, which underwent initial testing last summer. NASA hopes to eventually use the combination of these sails and the sun's "solar winds" to power spacecraft to Jupiter and beyond.

#### Topics for the Next Meeting

The next Workgroup meeting will be held on Tuesday, April 12, at a location to be determined. Topics will include not only Project, Budget and Community Relations Updates, but also a presentation on decontamination activities. Susan and the Workgroup members agreed that the July 19 meeting would include not only the regular updates, but also a presentation on monitoring and a presentation on the unrelated Ordnance Facility cleanup (managed by the U.S. Army Corps of Engineers) to be made by Workgroup members – John Blakeman, Janet Bohne and Mark Bohne –who are also members of the Ordnance Facility Restoration Advisory Board.

The meeting adjourned at 8:40 p.m.